

Application No. 10/092,048
Amendment "B" dated August 18, 2005
Reply to Office Action mailed June 22, 2005

REMARKS

These remarks and the accompanying amendments are responsive to the Office Action made final and dated June 22, 2005 (hereinafter referred to as the "final Office Action"). Claims 1-22 are pending, of which claims 1, 10, and 16 are independent radio module claims. As indicated above, independent claim 1 and dependent claims 3 and 6-8 are amended by this paper.¹

The final Office Action rejected independent claims 1 and 10 as being anticipated by U.S. Patent No. 5,896,574 to Bass, Sr. ("Bass"). Furthermore, the final Office Action repeated similar rejections as were provided in the prior Office Action dated November 3, 2004 (hereinafter referred to as the "prior Office Action"). In particular, the final Office Action continues to reject independent claims 1 and 10 under 35 U.S.C. 102(e) as being anticipated by U.S. Patent No. 6,377,218 to Nelson et al. ("Nelson"); rejects independent claims 16 under 35 U.S.C. § 103(a) as being unpatentable over *Nelson* in view of U.S. Patent No. 6,026,119 to Funk et al. ("Funk"); and rejected the remaining dependent claims as either anticipated under 35 U.S.C. § 102(b) by *Bass*, or under 35 U.S.C. § 102(c) by *Nelson*, or as unpatentable under 35 U.S.C. § 103(a) over *Nelson* in view of U.S. Patent No. 5,809,115 to Inkinen ("Inkinen"), U.S. Patent No. 6,026,119 to Funk ("Funk"), U.S. Patent No. 6,393,032 to Ikegami ("Ikegami"), U.S. Patent No. 6,035,183 to Todd et al. ("Todd"), and/or U.S. Patent No. 6,127,936 to Gendel et al. ("Gendel").²

Applicants' invention, as claimed for example in amended independent claim 1, relates to a radio module for use by one or more devices in a wireless network, wherein performance of the radio module varies based on position of the radio module within the wireless network. The radio module comprises: an antenna module that includes an antenna and is an integral part of the radio module; a number of other modules including a baseband module that performs demodulation and decoding on signals received over the antenna module and that performs modulation and coding on signals transmitted by the antenna module; a first interface that is configured to directly connect one of the plurality of other modules with a host device when the first interface is in use; a second interface that is configured to directly connect another of the

¹Support for the amendments can be found throughout the Specification, and particularly within Figure 3 and the corresponding paragraphs [030]-[037].

²Although the prior art status of any of the cited art is not being challenged at this time, Applicants reserve the right to do so in the future. Accordingly, any arguments and amendments made herein should not be construed as acquiescing to any prior art status or asserted teachings of the cited art.

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plurality of other modules to the host device when the second interface is in use; and a physical interface that detachably connects the radio module with the host device such that the radio module may be positioned within the wireless network without fixing the host device's location.

Applicants' invention, as claimed for example in independent claim 10, relates to a radio module for use with each wireless device in a wireless network such that communication occurs between the wireless devices over the wireless network, wherein the radio module's performance depends on the radio module's position within the wireless network. The radio module comprises: an antenna module that includes an antenna and is an integral part of the radio module; an interface circuit for logically connecting the antenna module with a host device, wherein the interface circuit includes a baseband module that demodulates and decodes signals received over the antenna module and that modulates and encodes signals transmitted through the antenna module; a physical interface for detachably connecting the radio module with the host device; and a cable that supports the logical connection between the interface circuit and the host device through the physical interface, wherein the cable permits the radio module to be flexibly positioned within the wireless network without dictating the host device's location.

Applicants' invention, as claimed for example in independent claim 16, relates to a radio module that can be flexibly positioned within a wireless network to improve performance of the radio module, the performance of the radio module varying based on position within the wireless network. The radio module comprises: an antenna module including an antenna that is an integral part of the radio module; an interface circuit, wherein the interface circuit includes a baseband module, a data link control module, a media access control module, and a physical layer module; a processor and memory, wherein the processor provides processing requirements for the interface circuit on the signals that are received and broadcast over the wireless network; a protocol link; and a physical interface including a cable that detachably connects with a host device such that the radio module may be moved within the wireless network to improve antenna performance without changing the host device's location.

"A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." MPEP § 2131. That is, "for anticipation under 35 U.S.C. 102, the reference must teach every aspect of the claimed invention either explicitly or impliedly." MPEP § 706.02. Applicants also note that "[i]n determining that quantum of prior art disclosure which is necessary to declare an applicant's

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invention 'not novel' or 'anticipated' within section 102, the stated test is whether a reference contains an 'enabling disclosure.'" MPEP § 2121.01. In other words, a cited reference must be enabled with respect to each claim limitation.

In order to establish a *prima facie* case of obviousness, "the prior art reference (or references when combined) must teach or suggest all the claim limitations." MPEP § 2143 (emphasis added).

During examination, the pending claims are given their broadest reasonable interpretation, *i.e.*, they are interpreted as broadly as their terms reasonably allow, consistent with the specification. MPEP §§ 2111 & 2111.01.

Bass discloses a PCMCIA card that contains a baseband portion of a modem and that may be inserted into any PCMCIA adapter slot. Col. 3, ll. 43-47. The PCMCIA card (also referred to as the baseband card) may be connected to a radio module using a cable. Col. 3, ll. 47-50. See also Col. 4, ll. 3-29.

Nelson discloses a peripheral component coupled to a host device. Col. 3, ll. 26-28; Figure 1. The peripheral component includes an antenna for sending and receiving wireless signals. Col. 3, ll. 60-62. The antenna is coupled to a radio frequency module, a link controller 220, a microcontroller, and an external interface. Col. 4, ll. 35-44. As shown in Figure 3a, the antenna is withdrawn from a housing similar to withdrawing an oil dipstick from an automobile. Col. 5, ll. 35-37. The antenna is made of a resilient material such that when it is extracted from the housing it returns to a pre-determined position to receive and transmit wireless signals. Col. 5, ll. 50-59.

Funk discloses a wireless communication modem. Col. 2, ll. 28-43. As shown in Figure 3, an antenna attaches or is mechanically coupled to the modem chassis and is electrically connected to a PCB to provide signal reception and transmission capabilities. Col. 4, ll. 20-27.

Among other things, however, *Bass*, *Nelson* and *Funk* fail to teach, suggest, or enable, a radio module that has at least two interfaces that are configured to connect different modules within the radio module to the host device as recited in Claim 1. This permits significant flexibility in how the full possible functionality of the radio module is actually distributed between the host device and the radio module. Rather, in each of *Bass*, *Nelson* and *Funk*, even if there were multiple interfaces, those interfaces would not connect *different* modules within the radio module to the host device.

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With further respect to independent claim 1, and further addressing independent claims 10 and 16, *Bass* does not teach, suggest, or enable a radio module that includes a baseband module, in conjunction with the other recited features of the independent claims. Specifically, the final Office Action asserts that radio module 209 of *Bass* corresponds to the recited "radio module" recited in the independent claims. However, *Bass* teaches that the baseband module is in the baseband card 205, not the radio module 209. Therefore, *Bass* expressly teaches away from the recited features of the independent claims.

With respect to independent claim 10, neither *Bass*, *Nelson*, nor *Funk* teach, suggest or enable a cable that supports the logical connection between the interface circuit (that includes the baseband module) of the radio module and the host device through the physical interface. For instance in *Bass*, there is no radio module that includes both an antenna module and the baseband module. Furthermore, the baseband card that includes the baseband module is connected through a PCMCIA card slot, not through a cable. While the final Office Action asserts that element 211 of *Bass* is equivalent to the recited "cable", this is simply not true when taken in conjunction with the other recited features. For instance, the radio module 209 does not include a baseband module, which is instead located within the card 205. Thus, the element 211 cannot be a cable that connects a radio module that includes a baseband module with the host device.

In *Nelson*, although the final Office Action asserts that this "cable" feature is taught by referring to element 100 of Figure 2, the element 100 is just representing a logical connection, not a cable. The element 100 is described as being a system bus, which may physically be internal to the computer system 120. This interpretation is supported by Col. 3, ll. 38-40, in which *Nelson* teaches that the peripheral component 108 that includes the RF device 200 is a PCMCIA card, which simply plugs into a PCMCIA slot, without relying on the use of an external cable. While there is some discussion of the peripheral component 108 including an RJ-11 or RJ-45 jack (col. 3, ll. 39-49), these connection are not for connecting with the host device, but to other components (see Figure 1) such as may be used to further connect to a LAN, Internet, or other peripheral device. Neither *Funk*, nor any other of the cited art of record, teach, suggest, or enables this feature either.

Based on at least the foregoing reasons, therefore, Applicants respectfully submit that the cited art fails to anticipate or make obvious Applicants' invention, as claimed, for example, in independent claims 1, 10, and 16. Applicants note for the record that the other rejections and

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assertions of record with respect to the independent and dependent claims are now moot, and therefore need not be addressed individually. Accordingly, Applicants do not acquiesce to any assertions in the Office Action that are not specifically addressed above, and hereby reserve the right to challenge those assertions in the future, including any official notice taken by the Examiner, if necessary or desired. Therefore, withdrawal of all pending rejections is respectfully requested.

In the event that the Examiner finds any remaining impediment to a prompt allowance of this application that may be clarified through a telephone interview, the Examiner is requested to contact the undersigned attorney.

Dated this 18th day of August, 2005.

Respectfully submitted,



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